

REMARKS

Reconsideration and allowance of the subject application are respectfully requested. By this Amendment, Applicant has canceled claims 3 and 4 without prejudice or disclaimer and added new claim 10. Thus, claims 1, 2 and 5-10 are now pending in the application. In response to the Office Action (Paper No. 5), Applicant respectfully submits that the pending claims define patentable subject matter.

I. Preliminary Matters

The drawings are objected to because the Examiner maintains that Figures 18-21 should be labeled "Prior Art". Along with this Amendment, Applicant is submitting a proposed drawing correction wherein Figures 18-21 are labeled "Prior Art". Accordingly, the Examiner is requested to remove the objection to the drawings.

The specification is objected to because the Examiner maintains that the specification contains grammatical informalities on pages 10 and 12. By this Amendment, Applicant has amended the specification to improve clarity. Accordingly, the Examiner is requested to remove the objection to the specification.

II. The Present Invention

The present invention is directed to an automotive alternator enabling the operation of replacing the brushes to be performed easily, and having improved cooling efficiency. As shown in Figure 1, the alternator includes a case 33, a rotor 7 disposed inside the case 33, a stator 8,

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brushes 10 for supplying electric current from an electric power supply to the rotor 7, and a brush holding assembly 100 secured to the case 33. The brush holding assembly 100 is provided with a cover 11b and a holding portion 11a for holding the brushes 10 within the holding portion 11a. An open portion 50 in a position on the case 33 facing the cover 11b of the brush holding assembly 100. The location of the open portion 50 enables easy replacement of the brushes 10 by removing the cover 11b without complete disassembling of the alternator.

As shown in Figure 4, a cap 60 may be removably mounted over the open portion 50 formed in the case 33 to prevent foreign matter and water from entering the case 33 via the open portion 50.

III. Prior Art Rejections

Claims 1, 2 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Umeda et al. (USP 5,955,810; hereinafter "Umeda") in view of Csaki (USP 3,603,824). Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Umeda in view of Csaki and Applicant's admitted prior art (Fig. 18). Claims 3-5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Umeda in view of Csaki and Sekyra (USP 2,194,620). Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Umeda in view of Csaki, Sekyra and Janetter (USP 1,651,059). Claim 7 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Umeda in view of Csaki, Sekyra and Hyatt, Jr. et al. (USP 5,990,594; hereinafter "Hyatt").

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By this Amendment, Applicant has amended independent claim 1 to incorporate the subject matter of dependent claims 3 and 4. In particular, amended claim 1 now recites, in part, that "said brush holding assembly is constructed such that a holding assembly terminal is formed integrally therewith in a resin molding, said holding assembly terminal and a brush terminal mounted to a wire connected to said brushes being electrically connected by a connection member, a connection portion for connecting said holding assembly terminal and said brush terminal being disposed in said open portion." As shown in Figures 3, 8 and 12, a wire electrically couples a brush terminal to the brush. As shown in Figures 5 and 11, the brush terminal ⁽⁶²⁾ and a holding assembly terminal of the brush holding assembly are exposed at the open portion and secured together by a screw. Thus, electrical connection of the holding assembly terminals and the brushes is simple, and the operation of replacing the brushes is improved. Fig 8A

Applicant respectfully submits that the applied references, alone or combined, do not teach or suggest "a connection portion for connecting said holding assembly terminal and said brush terminal being disposed in said open portion", as recited independent claim 1. In the Office Action, the Examiner (with reference to canceled claim 4) asserts that Sekyra (in combination with Umeda and Csaki) discloses this feature of the claimed invention. However, the brush and the holding assembly (casing) are connected inside the holding assembly such that the connection portion for connecting the holding assembly terminal and the brush terminal can not be disposed in the open portion. Similarly, Umeda and Csaki fail to teach or suggest this feature of amended claim 1.

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Accordingly, Applicant respectfully submits that independent claim 1, as well as dependent claims 2 and 5-9, should be allowable because the combined references do not teach or suggest all of the features of the claims.

By this Amendment, Applicant has added new dependent 10 to further define the claimed invention. Applicant respectfully submits that claim 10 should be allowable over the prior art of record because the cited references do not teach or suggest a cap member removably mounted over the open portion for allowing access to the brush holding assembly via the open portion, as claimed.

IV. Conclusion


In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE TITLE:

The title is changed as follows:

**ALTERNATOR INCLUDING CASE WITH OPEN PORTION FOR BRUSH
REMOVAL**

IN THE SPECIFICATION:

The specification is changed as follows:

Page 10, first full paragraph:

Figure 4 is a cross section of an automotive alternator according to Embodiment 2 of the present invention, Figure 5 is a view of the automotive alternator in Figure 4 viewed from the direction of an arrow B (a cap 60 is omitted), Figure 6 is a diagram showing a rear bracket end of an internal portion of the automotive alternator in Figure 4, Figure 7A is a plan of a brush holding assembly 61 of the automotive alternator in Figure 4 with a cover 64b removed, Figure 7B is a plan of the brush holding assembly 61 of the automotive alternator in Figure 4, Figure 7C is a front elevation of the brush holding assembly 61 of the automotive alternator in Figure 4, Figure 8A is a front elevation of a brush 10 and a brush terminal [62?] 62 from the automotive alternator in Figure 4, and Figure 8B is a side elevation of the brush 10 and the brush terminal [62?] 62 from the automotive alternator in Figure 4 viewed from the right-hand side in Figure 8A.

Page 12, first full paragraph:

Figure 11 is a view of an automotive alternator according to Embodiment 3 of the present invention from an end of a rear bracket 32 (with the cap 60 removed), Figure 12A is a front elevation of a brush 10 and a brush terminal 67 from the automotive alternator in Figure 11, and Figure 12B is a side elevation of the brush 10 and the brush terminal 67 from the automotive alternator in Figure 11 viewed from the right-hand side in Figure [12A?] 12A.

IN THE CLAIMS:

Claims 3 and 4 are canceled.

The claims are amended as follows:

1. (Amended) An alternator comprising:

a case;

a rotor disposed inside said case, said rotor including a rotor coil for generating a magnetic flux on passage of an electric current therethrough, and a plurality of claw-shaped magnetic poles extending in an axial direction and covering said rotor coil, said claw-shaped magnetic poles being magnetized into North-seeking (N) and South-seeking (S) poles by said magnetic flux;

a stator including a stator core provided with a plurality of slots formed so as to extend axially and be spaced circumferentially, and a stator winding mounted to said stator core;

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brushes for supplying electric current from an electric power supply to said rotor coil;
[and]

a brush holding assembly secured to said case, said brush holding assembly holding said brushes within a holding portion and [being provided with] including a cover capable of being opened to remove said brushes, and

an open portion for removal and insertion of said brushes being formed at a position on said case facing said cover,

wherein said brush holding assembly is constructed such that a holding assembly terminal is formed integrally therewith in a resin molding, said holding assembly terminal and a brush terminal mounted to a wire connected to said brushes being electrically connected by a connection member, a connection portion for connecting said holding assembly terminal and said brush terminal being disposed in said open portion.

Claim 10 is added as a new claim.